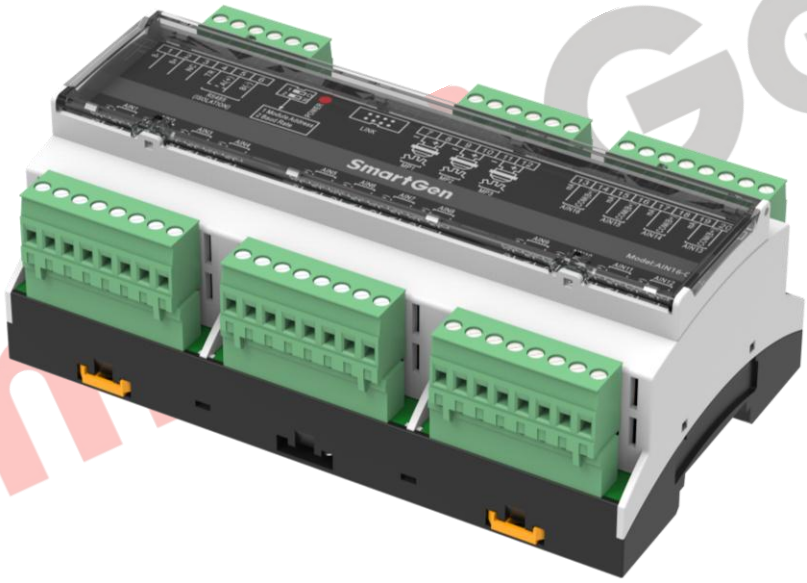
AIN16-C-2

ANALOG INPUT MODULE

USER MANUAL



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Chinese trademark

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SmartGen — make your generator ***smart***

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Table 1 - Software Version

Date	Version	Content
2021-09-10	1.0	Original release.

Table 2 - Notation Clarification

Symbol	Instruction
NOTE	Highlights an essential element of a procedure to ensure correctness.
CAUTION	Indicates a procedure or practice, which, if not strictly observed, could result in damage or destruction of equipment.
WARNING	Indicates a procedure or practice, which could result in injury to personnel or loss of life if not followed correctly.

CONTENTS

1 OVERVIEW

AIN16-C-2 Analog Input Module is a module which has 16 channels of 4mA-20mA sensor input and 3 channels of speed sensor input. The 4mA-20mA data and speed data are transmitted to the master controller for processing via RS485 port. Different alarm threshold values can be set for each sensor via master controller.

2 PERFORMANCE AND CHARACTERISTICS

- With 32-bit ARM based SCM, high integration of hardware and more reliable;
- Must be used with master controller together;
- RS485 communication baud rate can be set as 9600bps or 19200bps via dial switch;
- Module address can be set as 1 or 2 via dial switch;
- Wide power supply range DC(18~35)V, suitable to different battery voltage environment;
- 35mm guide rail mounting type;
- Modular design, pluggable terminal, compact structure and easy installation.

3 TECHNICAL PARAMETERS

Table 3 – Technical Parameters

Item	Content
Working Voltage Range	DC18.0V~35.0V
Power Consumption	<0.5W
Input Sensor Type	(4-20)mA Current Type
Measurement Accuracy	Class 0.5
RS485 Communication Parameter	Baud rate: 9600bps, Stop bit: 2-bit, Data bit: 8-bit, Parity bit: no parity
Case Dimension	161.6mm x 89.7mm x 60.7mm
Rail Dimension	35mm
Working Temperature	(-25~+70)°C
Working Humidity	(20~93)%RH
Storage Temperature	(-30~+80)°C
Weight	0.33kg

4 CONNECTION

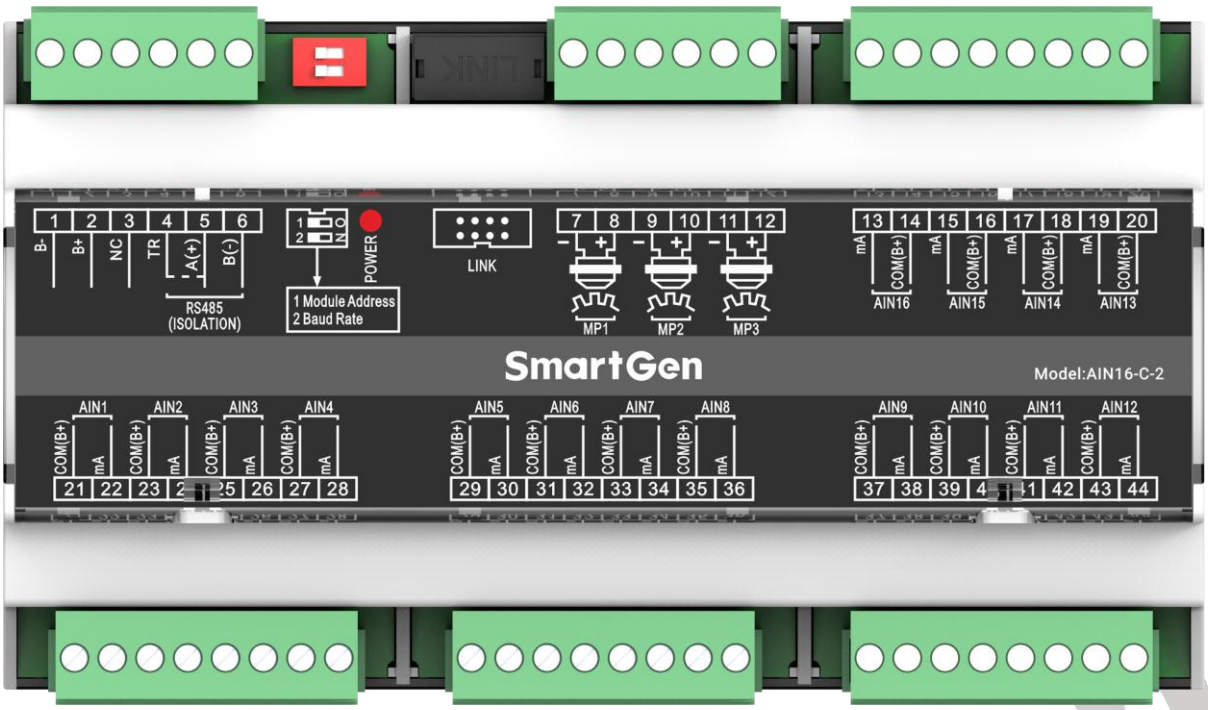

Fig.1 – AIN16-C-2 Panel Drawing

Table 4 – Terminal Connection

No.	Function	Cable Size	Description
1	B-	1.0mm²	DC power supply negative input.
2	B+	1.0mm²	DC power supply positive input.
3	NC		No Contact.
4	120Ω Terminal Matched Resistance	0.5mm²	Short connect Terminal 4 and Terminal 5 if the matched resistance is required.
5	A(+)	0.5mm²	The RS485 port for communication with master controller.
6	B(-)		
7	MP1(-)	0.5mm²	Connect with speed sensor (shielded wire is recommended). Speed sensor input (-), B- has been connected in the controller.
8	MP1(+)	0.5mm²	
9	MP2(-)	0.5mm²	Connect with speed sensor (shielded wire is recommended). Speed sensor input (-), B- has been connected in the controller.
10	MP2(+)	0.5mm²	
11	MP3(-)	0.5mm²	Connect with speed sensor (shielded wire is recommended). Speed sensor input (-), B- has been connected in the controller.
12	MP3(+)	0.5mm²	
13	AIN16(mA)	0.5mm²	(4-20)mA analog input.
14	AIN16(Com(B+))		B+ voltage output (provide power supply for pressure transmitter).

No.	Function	Cable Size	Description
15	AIN15(mA)	0.5mm²	(4-20)mA analog input.
16	AIN15(Com(B+)		B+ voltage output (provide power supply for pressure transmitter).
17	AIN14(mA)	0.5mm²	(4-20)mA analog input.
18	AIN14(mA)		B+ voltage output (provide power supply for pressure transmitter).
19	AIN13(mA)	0.5mm²	(4-20)mA analog input.
20	AIN13(Com(B+))		B+ voltage output (provide power supply for pressure transmitter).
21	AIN1(Com(B+))	0.5mm²	B+ voltage output (provide power supply for pressure transmitter).
22	AIN1(mA)		(4-20)mA analog input.
23	AIN2(Com(B+))	0.5mm²	B+ voltage output (provide power supply for pressure transmitter).
24	AIN2(mA)		(4-20)mA analog input.
25	AIN3(Com(B+))	0.5mm²	B+ voltage output (provide power supply for pressure transmitter).
26	AIN3(mA)		(4-20)mA analog input.
27	AIN4(Com(B+))	0.5mm²	B+ voltage output (provide power supply for pressure transmitter).
28	AIN4(mA)		(4-20)mA analog input.
29	AIN5(Com(B+))	0.5mm²	B+ voltage output (provide power supply for pressure transmitter).
30	AIN5(mA)		(4-20)mA analog input.
31	AIN6(Com(B+))	0.5mm²	B+ voltage output (provide power supply for pressure transmitter).
32	AIN6(mA)		(4-20)mA analog input.
33	AIN7(Com(B+))	0.5mm²	B+ voltage output (provide power supply for pressure transmitter).
34	AIN7(mA)		(4-20)mA analog input.
35	AIN8(Com(B+))	0.5mm²	B+ voltage output (provide power supply for pressure transmitter).
36	AIN8(mA)		(4-20)mA analog input.
37	AIN9(Com(B+))	0.5mm²	B+ voltage output (provide power supply for pressure transmitter).
38	AIN9(mA)		(4-20)mA analog input.
39	AIN10(Com(B+))	0.5mm²	B+ voltage output (provide power supply for pressure transmitter).
40	AIN10(mA)		(4-20)mA analog input.
41	AIN11(Com(B+))	0.5mm²	B+ voltage output (provide power supply for pressure transmitter).

No.	Function	Cable Size	Description
42	AIN11(mA)		(4-20)mA analog input.
43	AIN12(Com(B+))	0.5mm^2	B+ voltage output (provide power supply for pressure transmitter).
44	AIN12(mA)		(4-20)mA analog input.
	SWITCH	Address selection：It is module 1 when the switch 1 is connected to terminal 12 while module 2 when connect to ON terminal. Baud rate selection: It is 9600bps when the switch 2 is connected to terminal 12 while 19200bps when connect to ON terminal.	
	POWER	Power supply and communication normal indicator; It is flashing when the communication is abnormal, it is always illuminated when communication is normal.	
	LINK	System upgrade port; modify the default parameters.	

5 TYPICAL APPLICATION

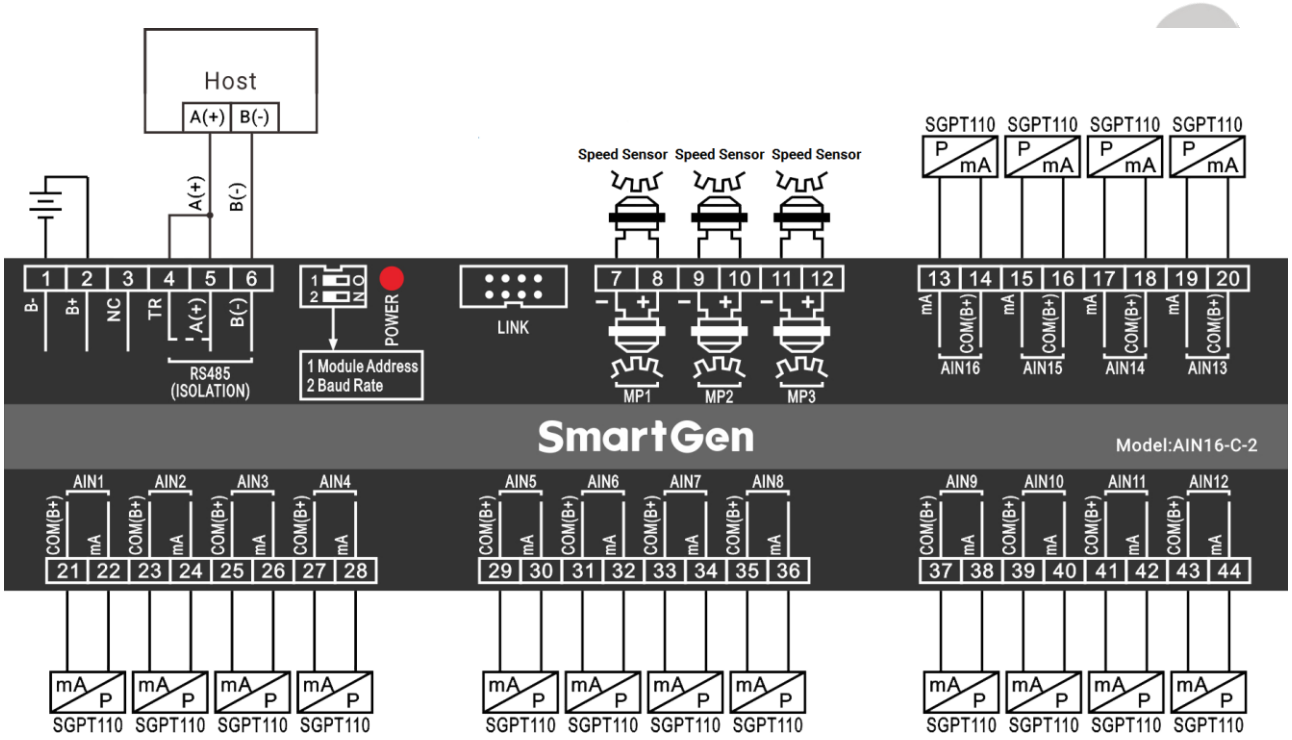

Fig.2 – AIN16-C-2 Typical Application Diagram

6 CASE DIMENSIONS

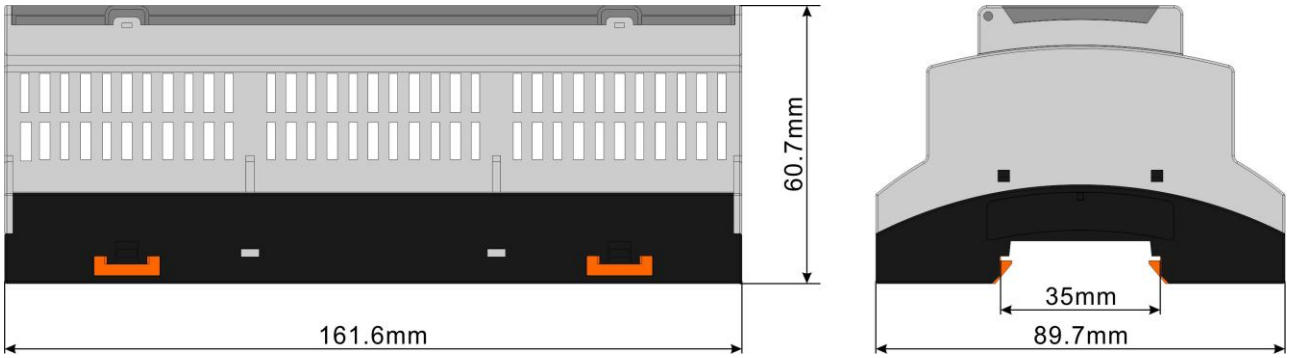

Fig.3 – Overall Dimensions

7 TROUBLE SHOOTING

Problem	Possible Solution
Controller no response with power	Check starting batteries; Check controller connection wirings;
RS485 communication failure	Check if RS485 wires are connected correctly; Check if 120Ω resistance is connected; Check if the baud rate and stop-bit of master controller are correct.